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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,146	12/20/2001	Francis T. McQuade	102276-200	3054

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EXAMINER

HOLLINGTON, JERMELE M

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,146

Applicant(s)

MCQUADE ET AL.

Examiner

Jermele M. Hollington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on Feb. 23, 2004. These drawings are approved.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn et al (6448506).

Regarding claim 1, Glenn et al disclose (see Figs. 1a-1h) a method of fabricating a plurality of micro probes (10) comprising the steps of: defining the shapes of a plurality of probes (10) as one or more masks; applying a photoresist (40) to first (30a) and second (30b) opposing sides of a metal foil (30) [see col. 4, line 64- col. 5, line 10]; overlaying one each of said masks (10) on opposing first (30a) and second (30b) sides of said metal foil (30); exposing said photoresist (40) to light passed through each of said masks (10); developing said photoresist (40); removing a portion of said photoresist (40) to expose a portion [via hole 21] of said metal foil (30); and applying an etcher [not shown but see col. 5, lines 7-11] to the surface of said metal foil (30) to remove said exposed portion to produce a plurality of probes.

Regarding claim 2, Glenn et al disclose (see Figs. 1a-1h) additional step of chemically polishing and plating the plurality of probes after the application of the etcher to the surface of said metal foil (see col. 5, lines 7-11).

4. Claims 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizuta (6144212).

Regarding claim 9, Mizuta discloses (see Fig. 1) a probe test head comprising: a first die (upper guide plate 5) comprised of first and second opposing planar surfaces (not numbered but shown) said first die (5) further comprising a pattern of first die holes (5a) extending through said first die (5) in a direction perpendicular to both of said first and second planar surfaces; a second die (lower guide plate 6) comprised of third and forth opposing planar surfaces (not number but shown) said second die (6) further comprising a pattern of second die holes (6a) corresponding to said pattern of first die holes (5a) said second die holes (6a) [see Fig. 9] extending through said second die (6) in said direction wherein said third planar surface is arranged in planar contact with said second planar surface such that said second die holes (6a) are offset from said first die holes (5a) [see Fig. 1] in a substantially uniform direction; and a plurality of probes (4) one each of said probes extending through one of said first die holes (5a) and one of said second die holes (6a) said probes (4) having a surface finish commensurate with having been formed by etching.

Regarding claim 10, Mizuta discloses two spacing covers (support members 10) one each of said spacing covers inset into said first (5) and second (6) die.

Regarding claim 11, Mizuta discloses each of said plurality of probes (4) is substantially

uniform in shape when compared to each other one of said plurality of probes (4) [see Fig. 1].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al (6448506).

Regarding claim 3, Glenn et al disclose applying a photoresist (40) to first (30a) and second (30b) opposing sides of a metal foil (30) [see col. 4, line 64- col. 5, line 10] and overlaying one each of said masks (10) on opposing first (30a) and second (30b) sides of said metal foil (30) wherein said metal foil (30) is composed of a copper alloy [see col. 4, lines 51-55]. However, Glenn et al do not disclose the metal foil is composed of a beryllium-copper alloy. It is well known to have metal foil composed of a beryllium-copper alloy where needed (see

MPEP 2144.04 *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947)). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the metal foil composed of a beryllium-copper alloy since the alloy, which relates to ornamentation that has no mechanical function, would provide support in a selective manner to each individual user fabricating a plurality of probes.

8. Claim 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn et al (6448506) in view of Mizuta (6144212).

Regarding claim 4, Glenn et al disclose (see Figs. 1a-1h) a method of fabricating a plurality of micro probes (10) comprising the steps of: defining the shapes of a plurality of probes (10) as one or more masks. However, they do not disclose the micro probe as claimed. Mizuta disclose (see Fig. 1) a micro probe (4) comprising: a probe base (upper portion 4a) having a generally uniform thickness; a probe shaft (intermediate portion 4b) connected to said probe base (4a) said probe shaft (4b) of said generally uniform thickness and extending along a curved expanse within said plane [see Fig. 1]; a probe end (lower portion 4c) connected to said probe shaft (4b) said probe end (4c) of said generally uniform thickness and extending for a substantially straight distance within said plane said straight distance being approximately parallel to said straight length [see Fig. 1]; and a scallop running substantially around a periphery comprised of the edges of said probe base (4a), said probe shaft (4b), and said probe end (4c). Further, Mizuta teaches that the addition of probe is advantageous because the necessary needle pressure is obtained even if variation of height direction is larger to some extent. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to

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modify the apparatus of Glenn et al by adding probe as taught by Mizuta in order to provide the necessary needle pressure regardless of height of the probe during testing.

Regarding claims 5-6, Glenn et al disclose (see Figs. 1a-1h) a method of fabricating a plurality of micro probes (10) comprising the steps of: defining the shapes of a plurality of probes (10) as one or more masks. Mizuta disclose (see Fig. 1) a micro probe (4) comprising: a probe base (upper portion 4a) having a generally uniform thickness; a probe shaft (intermediate portion 4b) connected to said probe base (4a) said probe shaft (4b) of said generally uniform thickness and a probe end (lower portion 4c). However, they do not disclose said uniform thickness is preferably between 2 mils -5 mils. It is well known to make the uniform thickness of the probe to be between 2 mils -5 mils (see MPEP 2144.04 *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the probe uniform thickness to be between 2 mils -5 mils since the size of the thickness would provide support in a selective manner to each individual user fabricating a probe.

Regarding claim 6, Mizuta discloses said scallop further comprises a scallop base (top portion of lower portion 4c) and a scallop tip (bottom portion of lower portion 4c).

Regarding claim 7, Mizuta discloses said scallop base (top portion of lower portion 4c) and said scallop tip (bottom portion of lower portion 4c) are separated by a substantially uniformly distance [see Fig. 1].

9. Claim 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuta (6144212).

Regarding claims 12-14, Mizuta discloses (see Fig. 1) a probe test head comprising: a first die (upper guide plate 5) having a pattern of first die holes (5a) extending through said first die (5); a second die (lower guide plate 6) having a pattern of second die holes (6a) and a plurality of probes (4) one each of said probes extending through one of said first die holes (5a) and one of said second die holes (6a). However, he does not disclose the probes are within 0.002-0.0005 inches of every other probe as claimed. It is well known to make the probes are within .002-.0005 inches of every other probe (see MPEP 2144.04 *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have the probes within .002-.0005 inches of every other probe since the spaces of the probes would provide support in a selective manner to each individual user using the probe test head for testing a DUT.

Conclusion

10. Applicant's arguments filed Feb. 23, 2004 have been fully considered but they are not persuasive.

Regarding claim 1, the applicants' argue: "*Applicants respectfully believe that the Examiner has incorrectly cited this reference. Glenn et al (U.S Patent No. 6,448,506) is not directed to a method of making a plurality of micro-probes.*"

In response to the above argument, A) the recitation "fabricating a plurality of micro probes" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on

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the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). B) A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Therefore, the Examiner believes the prior art still reads on the claimed invention.

Regarding claim 9, the applicants' argue: "*While Mizuta et al states that the tip of its probe needle can be etched using nitric acid (see col. 7, lines 50-55), it does not teach or in a way suggest that the probe be substantially overall etched to form a surface finish commensurate with having been formed by etching.*"

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., probe be substantially overall etched) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, since, as shown in col. 7, lines 50-55, the probe tip is being etched then the probe has to have a finish surface because of the acid use to etched the probe.

Regarding claim 3, please see the arguments above regarding claim 1.

Regarding claim 4, the applicants' argue: "The Mizuta microphone construction does not have a scallop running around its periphery."

In response to the above argument, claim 4 recites: "...a scallop running substantially around a periphery comprised of the edges of said probe base, said probe shaft and said probe end." Base on the claimed language, from the examiner's view, the scallop is form from the edges of the probe base, probe shaft and probe end. The examiner has established the scallop by saying above "a scallop... comprised of the edges of said probe base (4a), said probe shaft (4b), and said probe end (4c)." Therefore, the examiner believes the prior art still reads on the claimed invention.

In view of the above arguments by the examiner, the following is being applied.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (517) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jermele M. Hollington
Examiner
Art Unit 2829

J.M.H.
JMH
May 11, 2004

David A. Zandke
David A. Zandke
Primary Examiner
5/12/04